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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/569,171	02/22/2006	Stephan jo Cecile Henri Theeuwes	NL 031066 US1	7877
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NXP, B.V. NXP INTELLECTUAL PROPERTY DEPARTMENT M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER HO, ANTHONY	
			ART UNIT 2815	PAPER NUMBER
			NOTIFICATION DATE 03/21/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

### Office Action Summary

**Application No.**

10/569,171

**Applicant(s)**

THEEUWEN ET AL.

**Examiner**

ANTHONY HO

**Art Unit**

2815

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 5, 8, 9 and 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 7 and 10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 June 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/808)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 13, 2007 has been entered.

### ***Election/Restrictions***

Applicant's election without traverse of Invention I, drawn to claims 1-4, 6-7 and 10, in the reply filed on February 1, 2008 is acknowledged.

Accordingly, claims 5, 8-9 and 11 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on February 1, 2008.

### ***Drawings***

The drawings filed on June 1, 2007 are acceptable subject to correction of the informalities indicated on the attached "Notice of Draftsperson's Patent Drawing

Review," PTO-948. In order to avoid abandonment of this application, correction is required in reply to the Office action. The correction will not be held in abeyance.

### ***Specification***

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-4, 6-7 and 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 recites the limitation "wherein the shield has a two-stepped structure in the extension area comprising a first step and a second step, each of the first step and the second step having a height not substantially less than a thickness of said shield," but there is no support for this limitation in the originally filed specification. For example, page 5, line 29 – page 6, line 2 in the originally filed specification describes in detail the stepped shield structure 50. However, there is no mention that "the first step and the

second step having a height not substantially less than a thickness of said shield."

Thus, the above limitation is being treated as new matter.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4, 6-7 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 4 both recite the word "substantially", which causes the claims to be vague and unclear and leaves one of ordinary skill in the art in doubt as to the meaning of the claimed subject matter to which it refers, thereby rendering the definition of the subject-matter of said claims unclear.

Claim 4 recites the limitation "interfaces" in line 2 of claim 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 recites the limitation "the ratio" in line 1 of claim 7. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Den Heuvel (US PUB 2002/0102800).

Van Den Heuvel discloses an electronic device, comprising a LDMOS type transistor provided at a surface of a semiconductor substrate made of silicon, the transistor having a source (leftmost 11) and a drain (rightmost 11) that are mutually connected through a channel, which transistor is further provided with a gate electrode (center 11) and a shield (27) formed as a metal silicide present between the gate and the drain, which drain is provided with a drain extension extending in the substrate towards the channel, the drain having a contact, drain contact and gate being mutually separated through an extension area, wherein the shield has a two-stepped structure (*the topmost portion of shield 27 is being considered the second step*) in the extension area, and a L-shaped spacer is present between the gate-electrode and shield (Figure 1; Figure 9; page 2 – page 3).

Claims 1, 3-4, 6-7, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Baliga (US Patent 6,545,316).

Baliga discloses an electronic device and method of manufacturing the same, comprising a LDMOS type transistor provided at a surface of a semiconductor substrate made of silicon, the transistor having a source and a drain that are mutually connected through a channel, which transistor is further provided with a gate electrode and a shield formed as a metal silicide present between the gate and the drain, which drain is provided with a drain extension extending in the substrate towards the channel, wherein

the drain extension is provided with a first and a second region, the first region having interfaces with the channel and the second region, the second region having an interface with a contact area within the drain, which first region has a higher dopant concentration than the second region (*see the transition region 710 having a higher doping concentration than the LDD region 708*), the ratio of the dopant concentrations in the first and second region is in the range of 1.2 to 2.5, the first region and interface between first and second region is substantially present within a shield area defined by a perpendicular projection of the shield on the substrate, the drain having a contact, drain contact and gate being mutually separated through an extension area, wherein the shield has a stepped structure in the extension area (Figure 9; column 14 – column 15).

Claims 1 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Applicant Admitted Prior Art (AAPA).

AAPA discloses an electronic device and method of manufacturing the same, comprising a LDMOS type transistor provided at a surface of a semiconductor substrate made of silicon, the transistor having a source and a drain that are mutually connected through a channel, which transistor is further provided with a gate electrode between the gate and the drain, which drain is provided with a drain extension extending in the substrate towards the channel, the drain having a contact, drain contact and gate being mutually separated through an extension area, wherein the shield has a two-stepped structure (*the topmost portion of shield 50 is being considered the second step*) in the extension area (Figure 1; page 3 – page 4).

***Response to Arguments***

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Ludikhuize et al (EP 0069429)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY HO whose telephone number is (571) 270-1432. The examiner can normally be reached on M-Th: 10:30AM-9:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on 571-272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anthony Ho/  
Examiner, Art Unit 2815

/Jerome Jackson Jr./  
Primary Examiner, Art Unit 2815